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ABSTRACT

This white paper on educational accountability was written in response to a request from the Colorado Commission on Higher Education (CCHE). Of major concern in this study of accountability are the distinctions between system-level and institutional-level obligations. The concept of accountability is developed and related to other important processes, such as master planning, institutional role and mission definition, program review, resource allocation, and governance. Factors that make accountability requirements different for institutions with different missions are also covered. Specific requirements for accountability processes and related state agency functions in Colorado are addressed, with attention to a variety of Colorado statutes and procedures. Included are recommendations to CCHE concerning: system-level accountability, institutional action on selected statewide priorities, institutional accountability processes, and institution-level action. Appended is information on the kinds of methods available to assess effectiveness dimensions at the institutional and state/system levels. (SW)

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Accountability in Higher Education:

Meaning and Methods

Prepared for

Colorado Commission on Higher Education

by

Dennis P. Jones

Peter T. Ewell

National Center for Higher Education Management Systems

January 31, 1987

HE 020 496

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Foreword

In November, 1986, the Colorado Commission on Higher Education issued a request for proposal for the development of a white paper on educational accountability. The scope of the paper requested by this RFP was broad, covering:

- policy issues related to state and institutional effectiveness
- relationships of master plans to system effectiveness
- the significance of role, mission, and scope statements to the evaluation of institutional effectiveness
- application of the principles discussed in the state of Colorado
- a proposal for action at state and institutional levels
- criteria to evaluate institutional and system performance.

In late December, a contract was awarded to the National Center for Higher Education Management Systems to prepare this paper.

During the month of January, 1987, the paper passed through four developmental stages--a preliminary outline, a detailed outline, a first draft document, and the final product. At each stage, NCHEMS staff involved in the project met with Commission staff to review the most recent material. Throughout this process the Commission staff members were most helpful, providing conscientious review and substantive comments on our draft materials, helping us to understand the Colorado context into which we were placing the concepts with which we were working, and ensuring that we promptly received all the background materials we felt we needed to complete this task.

While the staff members were most helpful at each step of the process, they gave us complete freedom to shape the contents of this paper as we deemed most appropriate. We want to thank Blenda Wilson, Charles Manning, Frank Armijo, Mark Chisholm, and Martha Romero for their assistance and to absolve them of any responsibility for errors in fact or logic that appear in this document.

Executive Summary

This white paper on educational accountability deals with three distinct topics. First, the concept of educational accountability is developed and related to other important processes such as master planning, role and mission definition, program review, and resource allocation. Second, these concepts are utilized as templates for analyzing current practice in the state of Colorado and for discussing the set of expectations incorporated in the various provisions of HB1187. Third, a set of recommendations are presented for action at both state and institutional levels.

In developing the concept of accountability, the central themes that emerge are as follows:

- Being accountable includes both effectively discharging an obligation and being answerable in that regard. Thus, the concept of accountability embraces issues of both performance and communication.

- These issues revolve around the questions of
  To whom?
  Are what obligations owed?
  By whom?

- For purposes of this paper, the "to whom?" is presumed to be students and their parents, the public, and the Governor and General Assembly.

- Specific--and different--accountability obligations are owed by institutions and by the state higher education agency. A discussion of the distinctions between system-level and institutional-level accountability is a major feature of this paper.

- The nature of the obligation owed can be expressed in terms of

  - student outcomes
  - contributions to state priorities
  - maintenance and improvements to the educational infrastructure within the state--the system of higher education and the individual institutions that comprise that system.

Following a detailed discussion of the concept of educational accountability, we explain the relationships between accountability and several of the Commission's other functions. The focus of this discussion is on the linkages between accountability and

- Master planning and the specification of state priorities

- Institutional role and mission and the shape of the educational system of the state

- Program review and both the achievement of state priorities and the refinement of institutional role and mission

- Resource allocation and the provision of incentives to accomplish state priorities

Having dealt with these topics at a conceptual level, we proceed to a discussion and analysis of the various substantive provisions of HB1187, using the concepts we have developed. The purposes are to place them within a single framework and, by doing so, show 1) the topics to which they speak and the topics on which they are silent and 2) their interrelatedness.

Finally, we offer a series of recommendations for both state-level and institutional action. These recommendations fall into four broad categories:

- Recommendations to CCHE with regard to system-level accountability
- Recommendations to CCHE regarding institutional action on selected statewide priorities
- Recommendations to CCHE regarding institutional accountability processes
- Recommendations concerning institution-level action.

The reader is referred to Section V of the paper for the substance of these recommendations.

Accountability in Higher Education:
Meaning and Methods

I. BACKGROUND

House Bill No. 1187, enacted in 1985, reestablished the Colorado Commission on Higher Education (CCHE) and delegated to it a variety of powers and duties. Article 13 of that bill mandates implementation of a higher education accountability program and directs CCHE to develop policies under which various governing boards and institutions are to carry out its provisions. In this Article, legislators specified many "ground rules" for such an accountability program--for example, "institutions shall design systematic programs to assess knowledge, capacities, and skills developed by students," and "the results of the assessment shall be communicated to the public"--but delegated the formulation of specific policies governing the program to the Commission.

As an initial step in formulating policy, CCHE issued a request for proposal to develop a white paper on accountability. This document was intended to serve as the focal point for "a dialogue with the higher education community, the General Assembly, and the public as to the appropriateness of various policy options." The National Center for Higher Education Management Systems (NCHEMS), a nonprofit organization with offices in Boulder, Colorado, was selected to prepare the paper.

The contents of the paper have been shaped by several global considerations. First, the term "accountability" has no commonly understood, operational meaning when applied to the performance of higher education institutions. Although the term is widely used and is generally understood to indicate the condition of being held responsible for meeting established obligations, definitions have not progressed beyond this simple formulation. As a consequence, we considered it imperative that the paper attempt to establish a common definitional base from which subsequent dialogue about accountability can proceed. Second, the mantle of "obligation" falls not only on institutions and their associated governing boards, but on CCHE as well. As a result, we considered that the concept of higher education accountability must be developed in such a way that the obligations and responsibilities of both institutions and state agency are related and clarified. Third, HB1187 assigns CCHE numerous duties in addition to accountability. Included, for example, are mandates to develop a master plan for postsecondary education in Colorado; to ensure that functioning program review processes are developed and maintained by each institution; to approve all new programs and establish criteria for program discontinuance; and to further define the role and mission of each Colorado institution of higher education. While presented in the legislation as unrelated items, these responsibilities are, in fact, highly interdependent. We felt that the more clearly the links between accountability and other functions were explained, the more useful the paper will be. Finally, the general phrase, "higher education accountability," takes on specific meaning in the context of the statutes, history, and current events of the state of Colorado. To make the paper more useful to the intended audiences, responsibilities of CCHE for a variety of functions are discussed and explicitly related to accountability.

With these considerations in mind, we have prepared a paper comprised of four major sections. Section II explores the notion of accountability in some depth

and develops a conceptual framework designed to highlight initial differences between state (system) level accountability and institution-level accountability; it also covers the factors that make accountability requirements different for institutions with different missions. Section III discusses relationships between accountability and other major functions of state higher education agencies, for example, master planning, finance, and program approval/review. Section IV particularizes the contents of Sections II and III to the state of Colorado, discussing the priorities and requirements that emerge from HB1187 and other sources in a Colorado context. Finally, Section V contains our observations and recommendations for "next steps" for CCHE consideration and action. Finally, we have included in an appendix some alternative approaches to assessing performance for both institutions and the state as a whole. We have also included in an appendix a list of reference works we believe will be helpful as the Commission moves to its next steps. Throughout, we have attempted to render the discussion complete and concrete without being unnecessarily burdensome. As always, saying enough without saying too much represents a significant challenge. We can but hope that we have succeeded.

II. THE CONCEPT OF ACCOUNTABILITY

A. Introduction

A first principle of effective communication is that the parties to any discourse must have a common language. Because the term "accountability" is a core concept, it is important that it be similarly understood by all parties at interest. These include institutions and governing boards, the General Assembly, the public at large, and CCHE itself. Unfortunately, providing a definition is not a simple task. One dictionary (the World Book Dictionary, 1982) defines accountability as "the state of being held responsible for carrying out one's obligations." The adjective, "accountable," is similarly defined as "answerable." Inspecting these simple definitions, two fundamental aspects of accountability emerge--(1) specifying a domain of obligation, and (2) being answerable for the effective discharge of that obligation. The first focuses on defining responsibilities or performance; the second focuses on communicating evidence of specified performance to audiences deemed entitled to it. Furthermore, inspection of this definition leads to a core question that frames any particular instance of "accountability." This question can be trisected as follows:

- To whom?
- Are what obligations owed ?
- By whom?

A brief discussion addressing each of these points will pave the way for a more in-depth treatment of the topic.

First, to whom is accountability owed? Higher education is a pluralistic enterprise serving a multitude of constituents. Among the most obvious are students (current and prospective) and their parents, executive and legislative branches of state government, and the public. Others, perhaps less salient, that must nevertheless be considered are employers, accrediting bodies, and other funders including the federal government and philanthropic organizations. For purposes of this paper, we will give primary attention to the prior set.

Second, what obligations are owed? Higher education is a multi-faceted enterprise, and there are thus many potential dimensions of obligation. In the recent past, questions of obligation/responsibility were framed primarily in terms of cost efficiency and in terms of adherence to established procedures in such areas as accounting, purchasing, and hiring. The emphasis was on the means of education. In response, higher education institutions and agencies developed numerous, and generally adequate, mechanisms for providing evidence of responsible behavior. Recently, however, the emphasis of accountability has changed. Now the major accountability issues are those that surround the ends of education. Primary emphasis is placed on what is actually produced, on effectiveness rather than efficiency. This change is profound, and our capacities to respond to it are generally inadequate. Indeed, many still proclaim the

practical folly of any such endeavor. But lack of a fully developed technology for assessing outcomes should not prevent us from stating as a basis for obligation the kinds of outcomes that ought to be produced. While this paper covers both efficiency and effectiveness in considering accountability, it is largely oriented toward the latter consideration.

Finally, who is to be held accountable? "Higher education" is far from a monolithic enterprise, and responsibility is widely distributed. Certain types of responsibility reside at the level of the institution itself, and at the levels of subunits such as schools, colleges, and programs within the institution. Other types of responsibility reside at the level of the individual administrator, faculty member, and student. Finally, a special responsibility falls on those who formulate policy, allocate resources and monitor the performance of the entire system of postsecondary education within a state.* Forced to make a simplifying choice among this array, we deal only with the concept of accountability as it pertains to institutions and to CCHE--the agency having some responsibility for the system of higher education in the state of Colorado.

In sum, we have limited discussion to accountability that is 1) owed to state government, students, and the public, 2) primarily for matters of institutional effectiveness, 3) by institutions and the state higher education agency. This domain is illustrated by figure 1.

B. The Substance of Accountability

Of the three component elements of "accountability" identified above, it is in the second that the basic conceptual issues lie. While questions of by whom and to whom obligations are owed still spark debate, discussion is far more frequently centered on the nature of the obligation rather than on its existence. Part of the issue is undoubtedly rooted in legitimate differences about the boundaries of authority among various parties at interest. We contend, however, that the absence of a sound conceptual framework for describing the substance of obligation is the primary cause of higher education's inability to deal rationally with the topic.

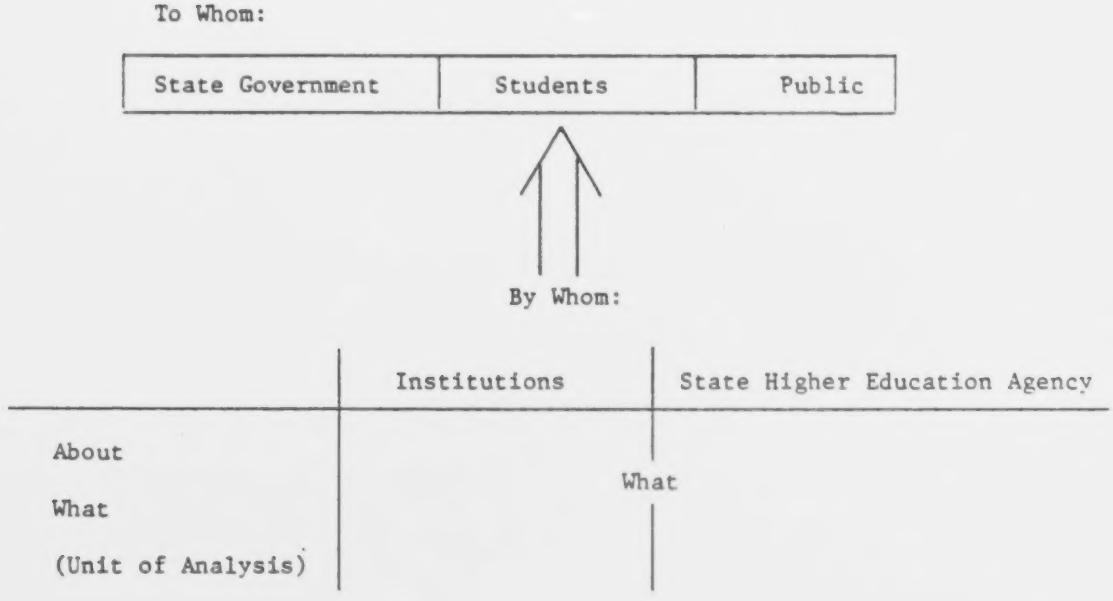
Most would agree that the obligation owed by institutions and agencies to their respective constituents is a demonstration of their effectiveness and their efficiency, and the rhetoric of higher education is replete with reference to these twin objectives. But what do we really mean by these terms? As used in the balance of this paper, the term effectiveness refers to the extent to which institutions and agencies of higher education accomplish their intended purposes or achieved desired ends. The term efficiency refers to the ability of institutions and agencies to accomplish desired ends while minimizing the use of resources. Unfortunately, historical difficulties of defining and assessing

---

*Here the term "system" is used in an informal rather than the formal (governance) sense and includes all institutions in the state (public, private, and proprietary, as well as any out-of-state institutions offering programs in the state) that, collectively, contribute to achieving desired state-level objectives.

Figure 1

The Domain of Accountability



effectiveness have too often led to a condition in which efficiency (translated as cost minimization) becomes an end in itself. This imbalance must be redressed; a necessary first step is to propose an understandable, commonly agreed-upon way of describing effectiveness.

As stated above, we propose that effectiveness first be defined as achieving intended outcomes. This deceptively simple definition hides a series of fundamental issues. First, in using the word, outcomes, we presume to know what educational outcomes, in fact, are. In using the word, intended, we raise the corollary question of "whose intention?" Finally, in using the word, achieving, we imply a capacity to assess or measure. Some of the measurement issues are addressed in an appendix to this report. The remainder of this section presents a method for defining "intended outcomes" in operational terms.

In beginning this task, it is most useful to first conceive of higher education as an integrated system of entities--institutions, agencies, and individuals interacting in pursuit of their own ends--and to recognize outcomes as consisting of changes (or maintenance) in state or condition within the entities of the system. From the point of view of each actor or entity within the system, outcomes can be expressed as:

a) Changes induced in other entities within the system

b) Conditions or improvements made internally

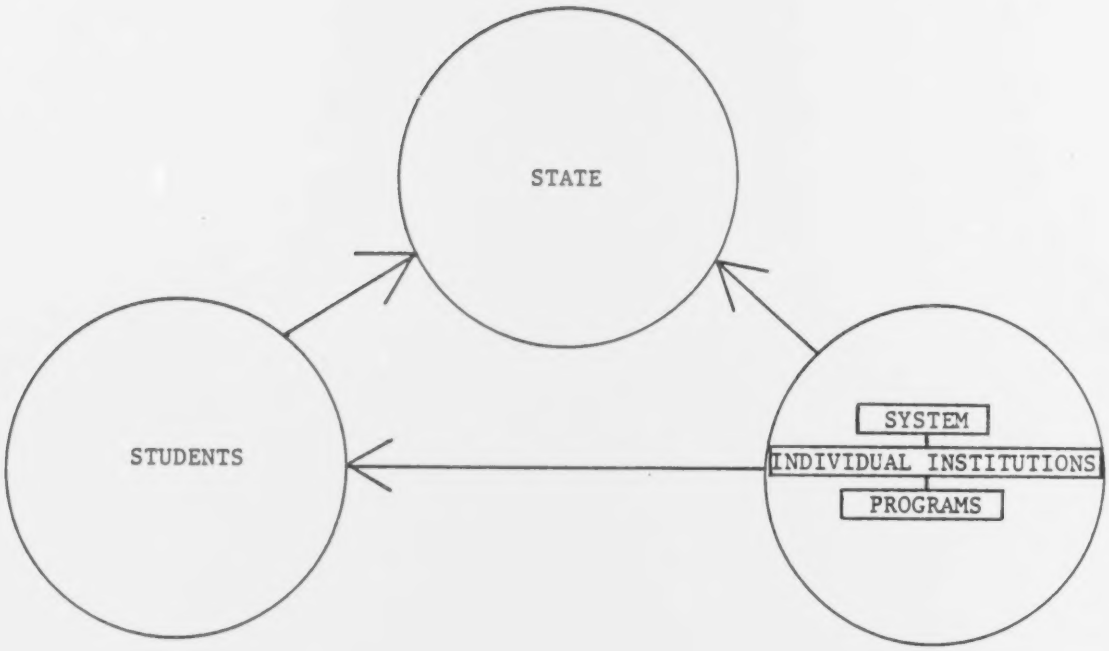
Outcomes can thus be expressed both in terms of what is done to others as a result of system operations, and in terms of assets, tangible and intangible, acquired by each actor. For example, the knowledge or skills imparted by a college to a student represent the first kind of outcome, a change induced by the institution in another entity, the student. Creation of a high quality faculty or a well-designed curriculum represents the second kind of outcome, a change in capacity or asset within the institution itself. This classification of desirable outcomes reflects the nature of the managerial task that all policymakers confront. All must be as concerned about creating and maintaining the productive capacity or "infrastructure" of their enterprise as they are with ensuring that it in fact produces something of value.

This construction highlights the need to focus on both the entities being held accountable and on the entities that stand to gain or lose. For purposes of this paper, we have already identified the accountable parties as public institutions and the state higher education agency (CCHE). We will now identify the prime beneficiaries of the system's operation as:

- The state as a whole (its economy, literacy of the population, etc.)
- The state system of postsecondary education
- Individual institutions
- Individual programs within institutions

Figure 2

The Entities in the System of Higher Education



- Individual students

In assessing effectiveness in terms of changes in the state system, individual institutions, and programs, the question is primarily one of "infrastructure"--the nature, quality, capacity and appropriateness of educational assets. Results of applying these assets are found in desirable changes of condition in the state as a whole, in identified groups of students, or in individual students.

Having identified the primary units for analysis, a central question remains: What specific conditions or changes for each entity should be included within the purview of educational accountability? In essence, this question asks us to identify the particular outcomes of importance for each entity in the system. In providing an initial answer, we do not intend to present an academic treatise on outcomes. Rather we wish to initially map the terrain, and to propose characteristics of each entity that might appropriately be considered within the domain of accountability. We present these characteristics in schematic form below:

1. Dimensions of Student Outcomes

For individual students, the characteristics of interest are as follows:

- knowledge outcomes, including
  - general knowledge, the kind of knowledge associated with broad fields of study and different modes of inquiry and investigation in the sciences, social sciences, humanities, and the arts.
  - specific knowledge, the kind of "major field" knowledge associated with specific academic disciplines.
- skills outcomes, including
  - general skills, such as reading, writing, speaking, and computing
  - "higher order" skills, such as analysis, synthesis, critical thinking, and problem-solving
  - vocational or professional skills--those skills associated with performing the tasks of particular occupations, vocations, or professions.
- attitudes and values, including
  - attitudes about work and lifelong learning, including motivation
  - satisfaction with the educational experience

- tolerance for cultural diversity and understanding of the values and experiences of other cultures

- basic values such as honesty and responsibility

- individual goals and their level of fulfillment

• involvement and success in subsequent endeavors, including

- employment

- additional education (in both formal and informal settings)

- professional activity and contributions

- contributions to community and society.

These categories with their associated subdivisions describe a full array of potential student outcomes, and remain valid whether the unit of analysis is a single student or an identified group of students (for example, by personal attributes such as age or ethnicity). Outcomes of this kind can also be aggregated as performance characteristics for institutions or programs.

2. State-Level Outcomes Dimensions

For the state as a whole, an entirely different set of desirable conditions are of interest, and are potentially affected by the system of higher education. These outcomes often are at the foundation of statements of intended impact for the statewide system of higher education. They include:

• access to and participation in the state system of higher education on the part of individuals of different characteristics and backgrounds, including

- socioeconomic status

- ethnicity

- gender

- place of residence (urban, rural, substate region)

- ability level

• an educated citizenry

- literacy levels

- general level of education

• a pool of trained manpower to meet the requirements of

- the private sector as a whole and by region
- the public sector as a whole and by region
- certain identified strategic industries

• the state's economy as a whole
- size and level of activity
- growth
- stability
- regional balance
- employment by occupation and region

• "quality of life" in the state, including
- cultural and recreational opportunities available
- quality of the physical environment
- quality of the elementary/secondary educational system
- quality and coverage of public services
- access to a variety of consumer goods and services

3. Research and Service Outcomes

In addition to positive changes in the characteristics of students and groups of students and in the state generally, the higher education system produces important additional outcomes. Traditionally, these are treated under the headings of research and service. In this case, the entities affected are the disciplines and special sub-populations within the broader rubric of the state.

• research/scholarship outcomes, including
- new discoveries/the creation of new knowledge/expanding the bodies of knowledge in the disciplines
- syntheses--organizing previously discovered knowledge in new ways
- applications--applying knowledge toward the solution of particular problems or the development of new products or methods
- creative works--the creation of new works of literature, art, or music

- service outcomes, including
  - access to college and university resources on the part of citizens and groups within the state or within a region within the state
  - improved conditions for identified subpopulations, for example
    - health of the indigent
    - service to elderly or confined populations

4. Dimensions for Assessing the Condition of the State System of Postsecondary Education

Questions about the condition of the state system as a whole are generally answered through identifying the characteristics of institutions and programs that comprise it. In addition, however, the condition of the state system depends upon:

- diversity of institutions--mix of institutions of different types
- geographic location of institutions
- mix and location of programs
- presence and effectiveness of articulation arrangements (the relationships among component institutions and programs)
- mix of alternative delivery mechanisms.

5. Dimensions for Assessing the Condition of Institutions

The outcomes produced by institutions are primarily visible in the improved skills and capacities of students and in the research and service outcomes produced. However, in assessing institutional effectiveness, it is also important to assess what the institution is--the appropriateness, adequacy, and quality of its assets, both tangible and intangible. Dimensions to be considered in this context are:

- clarity of the institution's mission
- consistency of program offerings with the institution's mission
- characteristics of the student body, and the match between their needs and the institution's structure, policies, and procedures
- cohesiveness and integrity of the curriculum
- adequacy, appropriateness, and quality of resources, including

- faculty and staff
- facilities
- equipment
- library and other collections
- finances

- presence and functioning of key institutional processes, including
  - planning
  - resource allocation
  - admissions/recruiting
  - staffing
  - program review/curriculum revision
  - student assessment
- intangible assets, such as
  - internal organizational climate--morale, openness of communication, shared priorities
  - image with critical external constituents (funders, the public, the legislature, etc.)--goodwill

These are dimensions that have historically been the focus of the institutional accreditation process. They remain important considerations. However, most accreditation agencies are balancing the "asset" perspective represented by these dimensions with an increased interest in the actual outcomes produced.

6. Dimensions for Assessing the Condition of Programs

The primary outcomes produced by programs are embodied in students--in their knowledge, skills, attitudes and values, and success in subsequent endeavors. These outcomes provide a basis for determining the quality of what the program does. In assessing the condition of the program itself or its infrastructure, it is appropriate to focus on the following areas:

- clarity of program purpose
- centrality of programs to the mission of the institution within which it is housed
- coherence and integrity of the curriculum

- attributes of student majors and the match between their needs and program characteristics
- adequacy and appropriateness of resources, including
  - faculty and staff
  - equipment
  - facilities
  - library, museum, and other collections
  - finances

C. Perspective: Effectiveness Is in the Eye of the Beholder

Earlier in this paper, we defined effectiveness as achieving desired outcomes or conditions. In the previous section, moreover, an array of potentially desirable outcomes was presented in summary form. Even in summary form, however, the list is very long. If the detail needed to make it operational in all its facets were provided, the list would be so long as to render it unmanageable. The good news in this situation is that all potential outcomes or conditions are not of equal value. Forced to choose among them, most individuals could assign rough priorities to these items with relatively little difficulty. The bad news is that particular priority lists developed by different individuals (or by individuals with different roles in the system) will probably be quite different. This reflects the pluralistic nature of higher education. Students come to higher education to obtain increased personal capacities and the economic success that has historically been correlated with acquiring those capacities. Industry desires access to the human resources of higher education (faculty and researchers), and to the products of applied research endeavors. College administrators and faculty typically are concerned with the adequacy and quality of the resources available to them. State legislators espouse access, efficiency, and contributions to economic development.

In some cases, all parties at interest will place a high priority on a particular outcome--the development of higher order skills in all students, for example. In other cases, different constituents will value different outcomes but these different priorities complement one another. The students' interest in a well-paying job after graduation, for example, is not in conflict with the employer's interest in hiring well-qualified new employees. In still other cases, a particular constituent may value a particular outcome highly while no other constituent registers interest. Finally, there are instances where two or more critical constituents are in direct conflict over a basic value. Discipline faculty, for example, may maintain that knowledge of a particular discipline is the best foundation for success in later professional study, while students and ultimate employers may feel otherwise. Given this complexity, those being held accountable must make choices. Each must establish a vision of what "effectiveness" means in their own context; in short, they have little choice but to accept the mantle of leadership.

By assuming a leadership role, however, institutional and state agency policymakers are faced with an additional problem. They must not only identify those dimensions of performance considered of highest priority but must also establish standards of performance. The challenge is to describe a performance profile for that portion of the postsecondary education system for which they are being held accountable.

Simplistically stated, educational leadership is revealed in an ability to specify those dimensions of performance having the highest priority (to label the horizontal lines on figure 3) and to articulate the associated standards or expectations (to place the x's on these lines).

Since being effective means achieving desired ends, it is necessary to move beyond stating expectation to an assessment of the extent to which those expectations have been met. In this regard two points must be noted. First, issues of assessment can take on a life of their own. In the technical world, debates become endless about whether or not various assessment techniques reliably measure the extent to which a particular outcome has been achieved. While these debates may lead to improved assessment techniques, it is important not to allow such considerations to dominate discussion. A useful perspective is to adopt the lawyer's approach to the topic and look for a preponderance of evidence rather than the precision measurements that might reflect an engineer's point of view. Using this standard, there are ways to gather assessment information relevant to nearly all performance dimensions that might be selected. A general discussion of approaches to assessment of various kinds of outcomes is included in Appendix A.

Second, producing outcomes is not the same as being effective. If the institution or program persists in producing outcomes that no constituent values, that institution or program is not being effective. It is the match between actual outcomes and desirable outcomes that determines effectiveness.

D. The Communications Component

Being accountable means not only performing up to expectations, but also implies communicating evidence of performance to those external groups that have a legitimate right to know. Briefly stated, the requirement for communication involves three steps:

1. Identifying the information needs of various audiences.

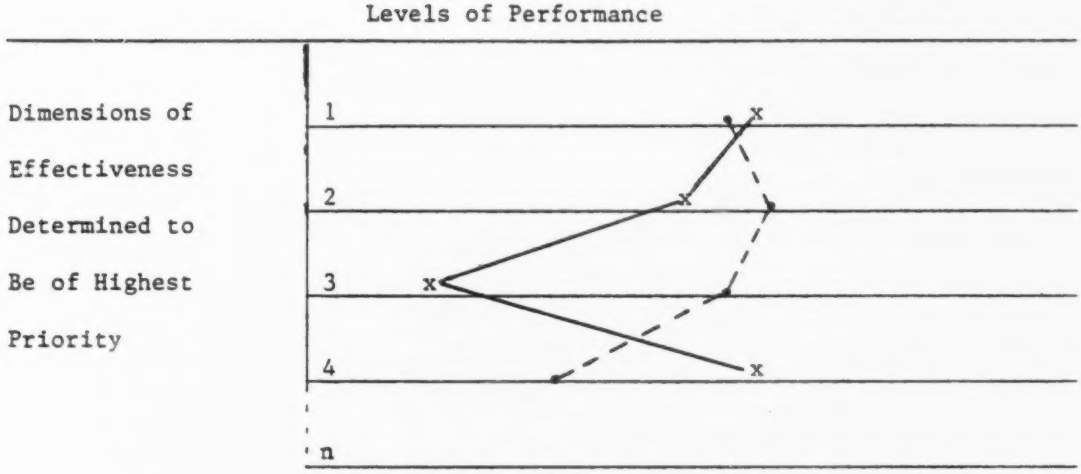
2. Acquiring the performance information responsive to those needs.

3. Presenting that information to various audiences in an appropriate, understandable manner.

As noted earlier, different constituent groups have different priorities for and different perspectives about higher education. Their interests are not served by developing a uniform "fact book" and making it available to one and all. Rather they are served (and accountability is served as well) when the information most critical to them is presented directly in its most usable form. For example, potential students, as educational

Figure 3

A Profile of Effectiveness



———— = Expectation Profile

– – – – – = Performance Profile

Dimension 1: Effective Performance

Dimension 3: Ineffective Performance

consumers, need information on which to base decisions about college participation and choice. They are served best by information that explicitly describes the past outcomes of attendance at a particular institution for students with similar backgrounds and abilities. What, for example, can they expect as a probability of successful completion? What happens to the graduates in terms of employment or further education? Quite different information must be presented to legislators; here the relevant concern is not only with successful job placement, but with the proportion of those job placements occurring within the state, within a particular geographic region, or in a particular key occupation or industry.

Because communication is an integral part of accountability, institutions and state agencies must explicitly recognize and plan for the targeted communications tailored to different audiences. Foremost among these audiences are state government, current and potential students and their parents, and the general public. Additional audiences, arising on a periodic basis, are accreditation agencies, the federal government, employers in various industries, and particular geographic communities.

At the same time, system-level accountability requires a different kind of communication, this time directed at state policymakers at the highest level. Here the object of communication goes beyond demonstrating the strengths and weaknesses of the state's higher education system, to include an assessment of the relative cost-effectiveness of investing in higher education compared to alternative investments that the state might make. In meeting the manpower requirements of strategic developing industries, for example, states may choose policy approaches that stress recruitment of out-of-state talent. In promoting "quality of life" they may choose to invest in major cultural institutions, or in improved recreational resources. In each instance, it is incumbent upon those responsible for higher education to make the case that investment in higher education will yield a greater long-term return on such wider state objectives than would investment in other alternatives.

If, as we have argued, communication is a part of accountability, assessment of how well such communication is accomplished should also be undertaken. To date, assessing the communications function has received little attention compared to assessing performance, per se. In the design of a total accountability system, however, developing an effective communication component, and the periodic assessment of how well that component functions, must also receive significant consideration.

E. Institutional and Agency Accountability: A Summary of Roles and Responsibilities

Although the explicit boundaries of responsibility between Colorado institutions and CCHE, as in many states, are negotiated within constraints of established statute and past practice, their respective domains contain areas of sole accountability and areas where accountability overlaps. A critical issue is the clear determination of areas of both independence and interdependence.

Turning to some of the concrete contents of each domain, figure 4 contains an indication of priority areas of responsibility for institutions and state agencies. This table is provided as an illustration, not a recommendation for the state of Colorado.

Certainly, we do not intend this classification to be prescriptive. Rather it represents our initial identification of those areas most central to the accountability concerns of each party, based on current national practice. At the most basic level, this classification highlights the fact that a state agency's primary attention should be devoted to shaping the state's higher education system as a whole, to identifying those areas in which the state has an identifiable programmatic (manpower production or research/service) priority, to ensuring the adequacy of resources provided, and to ensuring overall efficiency as well as effectiveness.

Institutional administrators, in turn, are held responsible for ensuring that all students acquire general knowledge and skills, that programs produce students with the requisite special knowledge and skills, that adequate and appropriate resources are acquired, that a student body of desired characteristics is recruited and retained, that programs consistent with institutional mission are offered, and that the institution operates efficiently. Clearly there are points of overlap between the two parties, and considerable attention must be given to coordination and developing common understanding. Just as importantly, however, there are significant areas of largely independent responsibility. Care must be taken that these areas are not neglected in an environment in which much energy is given to the areas of joint interest and accountability.

Figure 4

Typical Locus of Responsibility

for Different Areas of Higher Education Performance

Substance	Domain: Institution	Domain: State Agency
Student Outcomes--All Students		
General Knowledge (Modes of Inquiry)	x	x
Basic and Higher Order Skills	x	x
General Values	x	
Relationships		
- To Community	x	x
- To Economy/Employment	x	x
Student Goal Achievement	x	
Retention	x	x
Student Outcomes--Majors in Programs		
Special (Discipline Specific) Skills	x-all programs	x particularly for those
Special (Vocational/Professional) Skills	x-all programs	x programs defined as being a state
Values and Ethics Pertinent to Profession	x-all relevant progs.	x priority
Subsequent Success in	x-all, as appropriate	x "
- Employment		
- Further Education		
- Profession		
Student Outcomes--Individual Students		
Minimal Levels of	x-all students to	x-only those
- General Knowledge	be granted a	students certifie
- Basic and Higher Order Skills	degree	licensed by the state
Specific Knowledge	x-all students	x- "
Specific Skills	x-granted a disciplinary degree	x- "
State Outcomes--		
Access/Participation		x
Educated Citizenry		x
Pool of Trained Manpower		x
Employment Levels and Distribution		x
Economy		x
Quality of Life		x

Figure 4

(Continued)

Substance	Domain: Institution	Domain: State Agency
Other Outcomes--		
Research and Scholarship	x-all programs	x-particularly for those identified as state priorities
Service to Identified Subpopulations (Indigent, Entrepreneurs, etc.)	x-all programs	x- "
Capacity/Nature of State System		
Diversity of Institutions		x
Location of Institutions		x
Mix and Location of Programs		x
Condition of Institutions		
Clarity of Mission	x	x
Program Offerings Consistent with Mission	x	x
Characteristics of Student Body	x	x
Cohesiveness and Integrity of Curriculum	x	
Adequacy, Appropriateness, and Quality of Resources		
- Faculty and Staff	x	
- Facilities	x	x
- Equipment	x	
- Collections	x	
- Finances	x	x
Presence and Functioning of Key Processes		
- Planning	x	
- Resource Allocation	x	
- Admissions/Recruiting	x	
- Staffing	x	
- Program Review	x	x-particularly for those programs identified as state priorities
- Student Assessment	x-conducting	x-assuring presence of process
Intangible Assets		
- Internal Climate	x	
- Image	x-of institution	x-of higher education, broadly
Efficiency of Institutions	x	x

Figure 4

(Continued)

Substance	Domain: Institution	Domain: State Agency
Condition of Programs		
Clarity of Purpose	x	x-particularly for those programs identified as state priorities
Centrality to Mission	x	
Coherence and Integrity of Curriculum	x-ensuring program faculty attend to issue	
Characteristics of Student Majors		
Adequacy and Appropriateness of Resources		
- Faculty and Staff	x	
- Equipment	x	
- Facilities	x	
- Collections	x	
- Finances	x	
Efficiency of Programs	x	
Communication		
Communicating to		
- Students	x	
- Public	x	x
- State	x	x
Assessing Effectiveness of Communication		x

III. THE RELATIONSHIP OF ACCOUNTABILITY TO OTHER STATE PROCESSES

A. Introduction

Processes for ensuring accountability in higher education do not exist in a vacuum. While the substance of accountability revolves around assessing and determining responsibility for ends or conditions, many other relationships exist between state higher education agencies and institutions. These relationships are primarily means-oriented; they represent particular policy levers available to state agencies by means of which they seek to influence the higher education system. Among these state-level mechanisms are:

1. Master planning
2. Establishing institutional mission, role, and scope
3. Program review
4. Financing/state-level resource allocation/budgeting
5. Governance--establishing roles and responsibilities of the various parties at interest.

Each of these processes is part of a particular operational task that needs to be performed. Together, however, they provide the state higher education agency with means to influence the performance of the system as a whole.

The purpose of this section is to explore some explicit links between these established mechanisms and accountability. Our reason for documenting these links is a compelling need to ensure that overall policy formulation be undertaken consistently. Typically, we find that policy in each of these areas is developed independently. Indeed, in many cases such statewide processes are developed in direct response to a particular external pressure or mandate rather than in response to any articulated "grand design" for policy. Furthermore, rarely are such processes developed with a view toward how they will fit together administratively. Often, this is because their development reflects current organizational arrangements in both institutions and agencies--domains in which academic people devise program review mechanisms, finance people devise resource allocation schemes, and so forth.

Too often, the primary result of such unrelated approaches to policy formulation is confusion. Incentives built into the budget may or may not reflect the priorities established in the master plan. Criteria employed in program review may or may not include important dimensions stressed by the accountability process. In the face of contradiction, the primary response tends to be to rely on bureaucratic procedure rather than on a shared understanding to keep the system functioning.

Certainly the following sections are not intended as cure-alls for this common malady. Rather, they are intended to identify points of tangency between accountability and other salient and established state agency

processes and functions. Our ultimate aim in this discussion is to illustrate how wrong it is to view accountability as simply another process. Often, in fact, it will function through many established state agency processes to achieve a common end.

B. Master Planning

Master planning is the state-level equivalent of strategic planning at the institutional level. Here the linkage to accountability is direct, as planning is the visible mechanism by which state priorities are established and levels of expectation set. At the core of master planning is the need to specify:

- Those outcomes to be produced by the system of education that have the highest priority
- Those characteristics and capacities of the state higher education system that have the highest priority.

In both cases, the categories among which priorities must be set are the same as those presented earlier as potential dimensions of performance for accountability. To briefly reiterate, the outcomes of potential interest are:

1. Access/participation in the system of higher education
2. An educated citizenry (literacy and general levels of education)
3. Trained manpower in selected fields
4. Employment levels and distribution
5. Economic growth
6. Quality of life
7. Research and scholarship outcomes in selected areas
8. Provisions of specified services

Similarly, the characteristics and capacities of the state system at issue in any master planning exercise are:

1. Institutional diversity - the relationship and role of public education vis-a-vis independent and proprietary institutions, and the missions of the various institutions
2. Geographic location
3. Mix and location of programs
4. Interrelationships among institutions and programs
5. Mix of desirable delivery mechanisms

6. Institutional and program quality - how nationally competitive

7. Adequacy and appropriateness of resources

8. Efficiency

The assumption here is that master planning involves a series of state-level choices about what the system should do and should be. We recognize that this conception is at variance with much master planning as historically practiced. Traditionally, the focus of such exercises is confined to predicting enrollment levels in various institutions and to calculating the resource requirements associated with each enrollment level--a largely reactive exercise.

To reiterate, Master Planning is a necessary precursor to any state-level accountability process. It establishes both the framework and the criteria within which an accountability process must function. In its absence descriptive accountability information can be generated, but the core question of the system's effectiveness cannot be addressed.

C. Establishing Institutional Mission, Role, and Scope

This is perhaps the most contentious and difficult task faced by most state higher education agencies. Each term is imprecise and any action taken to specify mission, role, and scope is more likely to be seen by all parties as confining rather than enabling. Nevertheless, it is a task frequently assigned to the state higher education agency, and one directly related to accountability issues.

A statement of mission, role, and scope is a bounded statement of institutional aspiration. If written appropriately, it provides license for an institution to become more than it currently is, while at the same time, it puts some identifiable constraints on the dream. Caruthers and Lott state that mission, role, and scope statements describe the "static identity" of the institution--specifying basic institutional philosophy, clientele served, and services provided. Here again, however, major questions involve determining:

1. What the institution will do - the kinds of outcomes it seeks to produce and the student goals best served by the institution, including

   - knowledge
   - skills
   - attitudes/values
   - subsequent relationships

2. What particular clientele(s) the institution is to serve, stated in terms of

   - geographic origin
   - ability/academic achievement
   - age

- full-time/part-time status
- employment in certain professions (e.g., teaching or health care)
- socioeconomic status

3. What the institution is to be, stated in terms of

   - breadth and depth of instructional offerings
   - research or scholarship priorities
   - array of services to be provided
   - a collection of assets of particular (comparative/absolute) quality
   - a particular kind of educational environment (caring/competitive/theoretical/ practical/intellectual/etc.)
   - a reflection of a particular set of values (professional preparation, liberal arts, etc.)

While these dimensions describe an institution's mission, the notion of "role" as separate from "mission" is seldom adequately addressed. From an accountability perspective, we suggest that "role" be used to specify any particular responsibilities explicitly assigned to the institution in achieving an identified state priority. Examples might include general literacy, or service to particular industries, professions, or other constituencies. "Scope," in contrast, we suggest be used to specify a constraint--for example, the specification that a particular institution undertake only undergraduate instruction. A statement of institution mission, role, and scope, if stated well, will therefore indicate what an institution is not as well as what it is.

Statements of mission are thus the mirror image of the performance dimension constituting the heart of accountability. If carefully written, statements of institutional mission direct the assessment of effectiveness at both institutional and state levels. In the absence of a clear statement of mission, selecting particular measures of effectiveness itself creates a de facto statement of mission. By selecting particular measures and eschewing others, hidden priorities are revealed. Without the rationale provided by a mission statement, however, these priorities may or may not be appropriate. In the absence of either a mission statement or an assessment plan, of course, institutional behavior operationally defines the "mission."

Two implications for accountability emerge from this discussion. First, accountability and its associated assessment procedures, must reflect the full range of an institution's mission. For a major research university, for example, accountability should be cast in terms of the research and service components of its mission as well as covering its instructional components. Second, in the absence of an agreed-upon mission statement, accountability or assessment processes should not covertly encourage or reveal a scope that is inconsistent with that assigned to the institution.

D. Program Review

Program review, as a statewide exercise, has two distinct functions. The first is to appropriately adjust the complete inventory of programs

offered by the state system. In some instances this means adding a new program; in other instances it means discontinuing a program currently on the books. The second is to evaluate ongoing programs with an eye toward individual program improvement. The appropriate role of the state agency in the first of these tasks is very different from its role in the second.

In decisions affecting the inventory of programs--program approval and discontinuance--state agencies typically have a direct role. Indeed, it is quite common for a state agency to establish criteria for approving all new programs, and to have final authority for approving institutional requests to initiate new programs. Many state agencies, moreover, have the authority to recommend (or order) institutions to discontinue programs, usually after establishing public criteria for such action. Given its responsibility for statewide issues, we suggest that CCHE derive criteria for program approval or discontinuance directly from the statewide performance dimensions identified previously. Those most important to recall are:

1. State need--contribution to state system effectiveness. In most cases this criteria applies to professional programs through the preparation of needed manpower; there are numerous instances, however, where programs are added to increase participation rates for particular groups of students.

2. Furtherance of assigned institutional mission--contributions to the mission, role, and scope established for each institution throughout the system. Similarly, programs may be discontinued because they are determined to be outside the institution's approved mission or scope. Offerings of two-year programs in predominantly four-year institutions may be of this nature.

3. Impact on system-level efficiency--what are the marginal costs of having or not having the program? Here the criteria are often expressed in terms of program productivity and demand (number of majors and numbers of degrees granted per year) or duplication of programs. More important, however, is an added requirement to indicate that operating costs would in fact be reduced if the program were eliminated--and in many cases would not significantly increase if the program were approved.

Turning to the second function of program review--that of improving existing programs--the state role is significantly different. Here the role is not judgmental; rather it includes the following tasks:

1. To encourage or ensure the presence and effective functioning of an appropriate local review process at each institution

2. To encourage or ensure inclusion of those program performance dimensions of interest to the state in assessment guidelines governing the local review process.

Regardless of the purpose of program review, the state higher education agency is faced with a need to identify criteria for action. In both cases such criteria are already identifiable as dimensions of

accountability. When the function is program approval/discontinuance, these criteria must be made explicit; failure to do so inevitably leaves the agency open to changes of arbitrary and capricious action. Where the function is program improvement, moreover, the dimensions of performance of interest to the state primarily include the contributions of the program toward achievement of identifiable statewide priorities. Failure to make such contributions can be reviewed through the process and action taken to redress the problem. Here the state role is to make its priorities known, without interfering with local action directed toward program improvement.

E. Budgeting/Resource Allocation

The budget represents a principal avenue by which policy initiatives are implemented by state government. Because resource allocation mechanisms contain incentives for positive action on the part of institutions, the budget is a particularly attractive vehicle for shaping behavior. Thus, it is important to recognize linkages between the budget and achieving priority accountability objectives.

All procedures and mechanisms utilized to allocate resources inherently contain a set of incentives (and disincentives) for particular types of institutional behavior. In the main, however, these incentives remain implicit. In the drive to develop mechanisms that allow for the equitable allocation of resources to institutions, the incentives buried in the mechanism are seldom acknowledged. Instances are currently infrequent in which resource allocation procedures are designed explicitly to provide incentives for achieving selected, desirable ends. Most state-level resource allocation mechanisms are based on student FTE enrollment--either directly through formula or indirectly through incremental adjustments to a base budget figure. Here the incentive to the institution is clearly to enroll more students. To the extent that the allocation mechanism also reflects program cost differentials, there are additional incentives to expand high cost programs to the limits of student demand.

If the primary state goal is to expand access, this is a highly effective mechanism. If the intent is different, however, it is important to recognize several secondary incentives that are corrolaries to any FTE-driven formula. On the plus side, formulas provide incentives to increase the number of students retained. On the down side, such procedures create incentives to lower admission standards, to develop, without regard to mission, a wider array of programs in an attempt to attract a larger clientele, and in some cases to lower academic standards in an effort to avoid driving off any students that have enrolled. Other frequently used approaches to state-level resource allocation seek to ensure institutional capacities in certain areas deemed important, for example the capacities to deliver cooperative extension services, health care to the indigent, etc. These ends are typically achieved through special-purpose allocations of funds made to specific institutions.

The bulk of state funding provided to institutions of higher education will continue to be allocated through procedures that implicitly or explicitly establish increased student access as a state priority. Nevertheless, there are numerous opportunities at the margin to provide

incentive funding in support of additional high priority state objectives. Among the possibilities are:

1. Use of capitation grants to create incentives for producing manpower in selected critical need areas.

2. Use of similar mechanisms to reward institutions for helping minority students successfully complete a program of study.

3. Use of competitive grant programs to develop centers of excellence in areas deemed to be important to fill the research and service needs of the state.

4. Allocation of a pool of applied research enhancement funds to institutions on the basis of the amount of support for such activities acquired from the private sector.

5. Creation of a pool of resources to match funds raised by institutions in support of particular services or capacities deemed important by the state.

Points important to accountability in this brief discussion are two. First, all methods of resource allocation inherently contain a series of incentives and disincentives. It is important to catalogue those embedded in the resource allocation mechanisms currently being used and to ascertain the extent to which they are consistent with the achievement of priority state goals. Second, the incentive power of the budget is seldom effectively utilized. Once state priorities are established, creative uses of the resource allocation process to create incentives for the achievement of those desired ends can be a powerful policy lever for accountability.

F. Governance

Accountability, as we have defined and discussed it, also has major implications for governance relationships. To be sure, the structural aspects of each such relationship will be unique to each state and will reflect its history, traditions, and political culture. This discussion cannot, and should not, deal with this subject. Several general implications for governance relationships, however, cannot be ignored. They include the following:

1. The state higher education agency should assume responsibility for articulating statewide priorities for education, ensuring attention to these priorities by the governing boards and institutions, and monitoring progress toward achieving them.

2. Each institution should identify those dimensions of performance that best reflect its mission and should establish a mechanism to assess performance along those dimensions. The state role is to ensure that this selection reflects state priorities where appropriate, and to monitor the assessment process--not to do it, but to ensure that it is done.

3. The state agency should be responsible for communicating statewide accountability information to relevant statewide external constituents, primarily the public and other branches of state government. The institutions and governing boards should be responsible for communicating their appropriate accountability information to their own constituents--potential students and their parents, the public, state government. In this second regard the state role again is to ensure doing, not to do.

4. The state higher education agency should be responsible for ensuring that the various processes it administers are internally consistent, serve to reinforce achievement of identified state-level priorities, and contribute to a state system that contains institutions of complementary function and responsibility.

While these implications are stated in general terms, they serve to delineate some particular roles and responsibilities of major actors. Perhaps most usefully, they attempt to further articulate the special roles and responsibilities of a state agency. Although appropriate accountability responsibilities of public institutions have been stated in other places (e.g., NGA and ECS reports), the explicit state agency role has largely been defined to be one of ensuring institutional compliance. The above identifies a second major role--being accountable for the performance of the state system of higher education.

IV. APPLICATION OF CONCEPTS TO THE STATE OF COLORADO

In the first two sections, our intent was to develop the notion of accountability conceptually, without dealing explicitly with its application to conditions and needs within the state of Colorado. This task accomplished, we can now turn more specifically toward defining explicit requirements for accountability processes and related state agency functions in the state of Colorado. In this section, we will examine a variety of Colorado statutes and procedures in the light of previously developed concepts. In the section that follows, we will build on these observations to prepare a series of recommendations for action.

A. Higher Education Accountability

Article 13 of HB1187 describes the intent of the legislature with regard to establishing a higher education accountability program for the state of Colorado. In this statute, the legislature dealt explicitly (if briefly) with the substance of accountability, and with the communication of accountability information. With regard to the former, HB1187 states that:

> "Institutions of higher education (will) be held accountable for demonstrable improvements in student knowledge, capacities, and skills between entrance and graduation."

In addition to noting "knowledge, intellectual capacities and skills," the statute indicates that

> "expected student outcomes . . . may include other dimensions of student growth, such as self-confidence, persistence, leadership, empathy, social responsibility, understanding of cultural and intellectual differences, employability, and transferability."

Comparing this statement of desired student outcomes with the classification presented in section II highlights the fact that substantial additional specification of intended outcomes must be developed before assessment issues *per se* can be addressed. Questions of "what knowledge, which intellectual capacities and skills are of paramount importance?" must be addressed in detail. In the absence of specific language to the contrary, we conclude that institutions have considerable latitude in identifying those particular dimensions of student outcomes most important to them, consistent with 1) their institutional missions and 2) the policy directions of CCHE. Despite substantial freedom in selecting those outcomes dimensions that best reflect their missions, however, we note that by use of the word "knowledge" in Article 13, the General Assembly explicitly mandates assessment of cognitive outcomes. By extension, accountability approaches that focus solely on student placement or other aspects of behavior will be found deficient.

Furthermore, HB1187 deals explicitly only with institution-level outcomes; the concept of system-level outcomes is not recognized in statute. In the extant Master Plan for Colorado Postsecondary Education, however, five

primary goals for the postsecondary system are proposed. This set of goals is also incorporated into section 23-1-108 of HB1187. Somewhat paraphrased, the goals include:

1. Quality, where quality includes

   - Faculty with high academic or professional achievement and demonstrated competence;
   - Students with the ability, preparation, interest, and motivation to benefit from postsecondary education
   - Curricula with rigor, including for degree programs, a sound base in the liberal arts and sciences;
   - Learning support systems, including libraries, laboratories, learning technologies, and facilities;
   - Evaluation to assure quality;
   - Participation by faculty in research appropriate to the role and mission of the institution;
   - A financing base sufficient to assure minimum standards for the preceding elements

2. Access, as manifested in the opportunity of any individual in Colorado, with appropriate ability, preparation, interest, and motivation to attend an undergraduate program somewhere in the state. Limits to access to be overcome are specifically noted as:

   - Financial
   - Geographical
   - Remedial

3. Diversity of educational opportunity as manifested in an array of institutions of different types providing diversity along the following dimensions:

   - Academic and occupational programs and institutions with specialized programs;
   - methods of learning;
   - academic competitiveness;
   - size;
   - residential and commuter campuses;
   - public, private, and proprietary institutions.

4. Efficiency--accomplishing above goals within the limited resources available to the system of postsecondary education

5. Accountability for actions and policies to the elected representatives of Colorado citizens, explicitly including procedures for:

   - Program review
   - Financial review
   - Personnel policy review

These goal statements strongly reflect an orientation toward "system assets" as defined in previous sections. Of the list of "state-level

outcomes" defined earlier, only "access" is treated in the current master plan; outcomes dealing with such topics as trained manpower, the economy, and quality of life are currently omitted. Furthermore, questions concerning which, if any, student outcomes might be of priority interest to the state remain unanswered by the Master Plan.

Article 13 of HB1187 also deals with some of the procedural issues associated with conducting an accountability program. Items of particular note include:

1. Evidence of demonstrable improvements in knowledge, capacities, and skills of students between entry and exit is required. In short, where appropriate, there is an expectation that educational "value added" be assessed.

2. No particular assessment techniques are mandated; the only requirements are that assessment techniques be appropriate to the outcomes being assessed and that they be employed on an ongoing basis.

3. The information gleaned through this process be utilized to improve those programs to make outcomes more consistent with expectations.

Again the focus of accountability is on institutions; similar expectations with regard to CCHE and its accountability role vis-a-vis the higher education system are not expressed.

With regard to the communications aspect of accountability, HB1187 mandates that "these demonstrable improvements be publicly announced and available." The law further states that "the results of the institutional assessment shall be communicated to the public, its students, and potential students." Finally, CCHE is directed to "report annually to the Governor and the General Assembly on the development and implementation of this article." In this case, reporting requirements are established for both institutions and the state higher education agency. With regard to the former, the requirement emphasizes substantive aspects of institution-level accountability; with regard to the latter the emphasis is on procedural components. The requirement for a periodic report from CCHE to the public and the General Assembly on progress toward achieving substantive goals for the system of postsecondary education in the state is not explicitly addressed.

B. Master Planning

Section 23-1-108 of HB1187 deals with the duties and powers of CCHE with regard to systemwide planning. It states that "the commission shall develop and submit to the Governor and the General Assembly a master plan for Colorado postsecondary education." The legislation further states that, as part of the master planning process, the Commission has the authority to:

1. Establish a policy-based and continuing systemwide planning, programming and coordination process to effect the best use of available resources;

2. Establish such academic and vocational education planning as may be necessary to accomplish and sustain systemwide goals of high quality, access, diversity, efficiency, and accountability;

3. Determine the role and mission of each state-supported institution of higher education with statutory guidelines;

4. Establish enrollment policies;

5. Establish state policies that differentiate admission and program standards and are consistent with institutional role and mission;

6. Adopt statewide affirmative action policies for the Commission, governing boards, and state-supported institutions;

7. Develop criteria for determining if an institution should be consolidated or closed.

This mandate overlaps several other assigned CCHE responsibilities, specifically role and mission definition, program review, and resource allocation. In identifying this range of responsibilities, however, the statute reaffirms the five systemwide goals previously established in the Master Plan--quality, access, diversity, efficiency, and accountability.

It is also important to understand that a process to review and revise the Master Plan is currently underway. As part of this process, Commission staff have conducted numerous roundtable discussions at sites throughout the state to determine ways in which higher education could assist in meeting regional (economic and other) goals. These and other activities will probably result in revision or extension of existing goal statements included in the Master Plan. At the same time, goals dealing with either student outcomes (important skills etc.) or priority state outcomes (economic change, manpower development) might also be added. Selection of these priority areas is perhaps the most important task facing the Commission in the immediate future. Their specification represents the linch-pin that cohesively integrates numerous other Commission processes, among them role and mission definition, resource allocation, and program review. Numerous other policy initiatives are incorporated under the umbrella of master planning. Reexamination or reaffirmation of a statement of systemwide goals is central to many of them. As this process takes place, an important question involves the extent to which any revised statement can explicitly identify what the system is to do as well as what it is to be.

C. Institutional Mission, Role, and Scope

Among the provisions of HB1187 are statutory statements of institutional mission for each of the four-year institutions of higher education and for community colleges generally. These mission statements distinguish institutions primarily on the basis of the breadth and depth of programs they are expected to offer and of the admission standards applicable to the institutions. Having set statutory bounds in this manner, the legislature directed CCHE to further define the role and mission of each

institution and to establish for each, appropriate geographic and programmatic service areas.

Some institutions such as the University of Colorado at Boulder, Colorado State University, School of Mines, and University of Northern Colorado are explicitly identified as statewide institutions. Others are presumed to have a regional service area. Even those institutions having a statewide service area are expected to serve limited programmatic roles. For example, UNC is responsible for providing "graduate level programs needed by professional educators and education administrators." Similarly CU and CSU are charged with the responsibility to provide those graduate-level programs designated by the Commission as part of their respective statewide responsibilities.

Moving beyond statute, the Commission is faced with the task of identifying additional bases for institutional differentiation. In part, this will be achieved by further refining the statements of particular clienteles to be served by each institution. In some cases, clientele can be described in terms of residency within a particular service area. In others, clientele can be defined on the basis of profession (teachers, health care professionals, etc.). Mission differentiation can also be further accomplished by assigning to selected institutions leadership in the achievement of particular state-level goals. In any case, linkages between state higher education objectives and the nature of the higher education system as manifested in the array of assigned institutional missions must be recognizable and explicit. Important in this regard are citizen comments received during roundtable discussions in support of Master Plan revision. These comments indicated strong interest in 1) further adapting smaller institutions to serve particular needs of their regional service areas and 2) ensuring certain knowledge and skill outcomes on the part of all students educated in these institutions.

D. Program Review

Various provisions of HB1187 state that:

1. "The Commission shall review and approve, consistent with institutional role and mission and statewide educational needs, the proposal for any new program."

2. "The Commission shall establish . . . policies and criteria for the discontinuance of academic or vocational programs."

3. "Each governing board . . . shall submit to the Commission a plan describing the procedures and schedule for periodic program review and evaluation of each academic program at each institution consistent with the role and mission of each institution."

By these statutory provisions, the Commission is assigned a direct role in establishing criteria for new programs and for programs to be discontinued. Conceptually, the kinds of criteria appropriate to such processes were identified in section III above. To repeat, they include:

1. State need - contribution to state system effectiveness

2. Furtherance of assigned institutional mission

3. Impact on system-level efficiency.

Given current definitional deficiencies with regard to dimensions of state-level effectiveness and statements of institutional mission, CCHE cannot have a fully developed set of criteria for program approval or discontinuance according to these criteria. By default, significant short-run reliance will be placed upon the remaining criterion--efficiency. Nevertheless, some guidance can be obtained from extant statements of state priorities and institutional missions. For example, the extent to which new programs might contribute to improving access for underserved student populations is an identifiable review criterion derived from existing statements of state priorities. Similarly, specific prohibitions contained in statutory statements of institutional mission provide some criteria that can and have been employed in decisions to discontinue programs. Nevertheless, the amount of guidance provided in this arena could be substantially increased by developing a refined list of state-level priorities and by a set of more rigorously defined institutional mission statements.

The statute also gives CCHE authority to require a plan for systematic program review from each institution. The Commission has previously promulgated "Policy and General Procedures for State Level Review of Existing Programs," that specifies a variety of data elements and questions to be addressed in the case of each program reviewed. Included are questions of (1) centrality to mission, (2) student interest and program potential, (3) quality of resources, (4) program outcomes defined in program-specific ways, and (5) efficiency. These criteria are all interpreted in light of institutional, not systemwide, priorities. As guides to institutional process, in most cases, this is as it should be. Numerous programs, however, can be expected to contribute directly to the accomplishment of state-level goals. To date, CCHE has made no provision for incorporating "contribution to state-level priorities" as an explicit review criterion. This issue will be moot until the Commission identifies statewide priorities to which programs can be logically and directly linked. At that time, however, there will be a need to review these criteria.

Finally, conversations with Commission staff suggest that the current outcomes criterion in program review rarely yields substantial data on performance. At most, what is reported under this criterion is output or productivity information such as numbers of degrees granted or units of service provided. Occasionally, programs will report placement rates or (where easily documented) rates of passing certification or licensing examinations. If program review is to be effective in both serving accountability and improving performance, the outcomes criterion must receive at least as much attention as those dealing with student demand, centrality to mission, and quality of resources. At minimum, program review should include some indicators of cognitive or skill outcomes as well as more substantial and complete information on former student success.

E. Resource Allocation

Among the provisions of HB1187 are sections dealing with the role of the Commission in appropriating and allocating funds for operating and capital purposes. For operating funds, this role is made explicit in section 23-1-105, that states:

> "The commission shall establish, ..., the distribution formula of appropriations by the general assembly to each governing board under the following principles:
>
> a) To reflect the different roles and missions of institutions
> b) To reflect institutional costs which are fixed and those which vary, based upon the character of programs and the numbers of students enrolled;
> c) To reflect an emphasis on decentralized financial decision-making and stability of funding."

In addition, special provision is made for a quality incentive grant program, supported by an annual appropriation, to "promote, encourage, and recognize centers of excellence."

At the moment, the quality incentive grant program is the only part of assigned resource allocation responsibilities that directly ties funding to the accomplishment of stated objectives. Criteria to be used in identifying programs to be rewarded through the Recognition of Excellence portion of this program include 1) availability of outcomes information that demonstrates excellence in achieving a statewide goal, 2) importance to the institution's role and mission, and 3) evidence of having met an institution/college/departmental goal. Criteria to be used to select projects to be funded through the Promotion and Encouragement of Excellence component of the program include 1) evidence that the activity/project is related to a statewide goal and 2) importance to role and mission. These criteria make clear an intended linkage between acquisition of resources and demonstrated performance in areas that directly serve a state priority and/or that reinforce an institution's role and mission. As with program review, any steps taken to sharpen statements of state goals and institutional missions will make this program easier to administer and will render it a better instrument of state policy.

With the exception of the quality incentive grant program, most resources are allocated in a manner that is not linked to either institutional effectiveness or to identified contributions to state-level effectiveness (except insofar as the incentive to recruit more students serves an access goal for the state). The formula utilized is of a fairly common form, designed to allocate funds to governing boards equitably given the programmatic and student demands placed on their institutions. As indicated in section III, numerous additional budgetary devices are available to more directly tie resources to the achievement of state objectives or to reinforcement of institutional mission. As in prior sections, however, the instrument can be no sharper than the policy it implements. Until and unless statements of state priorities are made more

definitive, opportunities to create incentive mechanisms through the budget process will be limited.

Before leaving operational budgeting, it should be noted that the General Assembly has in the past made direct, single line item appropriations to governing boards for operation of certain programs of particular interest to the state. Mentioned explicitly in statutes are programs at the Health Sciences Center and the veterinary medicine program at CSU. In these cases, special treatment is probably at least as much a reflection of complexity as of special interest. Nevertheless, they set a precedent for similar categorical funding approaches to particular programs or initiatives deemed to be of importance to the accomplishment of state purposes.

In the area of capital budgeting, the Commission is charged with annually developing recommendations concerning "priority of funding of capital construction projects for the system of higher education." Section 23-1-106 further directs the Commission to ensure 1) that proposed projects are consistent with role and mission master planning of the institution, and 2) that facilities master plans conform to approved educational master plans. Here again, the institutional mission statement is the template against which proposals are ultimately measured. In instances where statements of institutional mission are neither clear nor commonly understood by all parties, established criteria for project funding have the potential for being extremely hard to administer.

F. Governance

Overall governance arrangements for higher education in the state of Colorado involve considerable decentralization, with significant authority residing in the various governing boards. Thus, in implementing the educational accountability program envisioned by Article 13 of HB1187, the governing boards eventually must come to play significant roles. Following our development of the accountability implications of this article, governing boards are responsible for:

1. Ensuring that each of the institutions under their control identify those dimensions of institutional effectiveness that are of institution-wide concern and reflect that institution's mission.

2. Ensuring that programs and procedures are established to assess current levels of institutional performance along each dimension.

3. Seeing that the results of these assessments are made available to the public, students, and the elected representatives of the citizens of Colorado.

4. Taking action to improve institutional programs and practices based on obtained results.

The role of the Commission in this milieu is threefold. First, a parallel set of priority identification and assessment activities at the system level necessarily evolve to the state higher education agency. These

activities not only provide benchmarks according to which to judge the effectiveness of the system but they also provide a necessary context for planning and assessment activities at the campus level. Second, there is an oversight function that the Commission cannot escape--ensuring that governing boards faithfully discharge the four responsibilities described above. Finally, the Commission has a special role in seeing to it that institutions effectively discharge their particular responsibilities for meeting selected state priority objectives. In such instances, the Commission's concern goes beyond the need to ensure that institutional priorities are appropriately set, assessed, and reported. It also includes a legitimate mandate to set certain common standards for assessment procedures or for particular outcomes.

V. RECOMMENDATIONS FOR FUTURE ACTION

Previous sections of this white paper described basic concepts of accountability, noted many relationships between accountability and other state-level processes, and discussed the mandate for establishing a Colorado higher education accountability program in the light of these concepts and relationships. This discussion provides a foundation for proposing action recommendations to the Commission and at the institutional level. The purpose of this section is to present these recommendations. All, we trust, are based on sound conceptual principles, and reflect the political culture and governance structure shaping Colorado higher education.

As outlined previously, we identify several distinct types of responsibilities of state higher education agencies. First, the state agency is directly responsible for implementing accountability as it applies to the state-system level. Secondly, the state agency has a responsibility for directly ensuring the accountability of institutions with regard to selected, statewide priorities. Thirdly, the Commission is responsible for establishing guidelines for local institutional action to fulfill accountability obligations, to directly assist institutions in designing and implementing such programs, and to appropriately monitor these initiatives as they develop. Recommendations in each of these three areas are presented below. Finally, we present some additional recommendations for institution-level action.

A. Recommendations to CCHE with Regard to System-Level Accountability

Recommendations that apply to the Commission's role at the system level are as follows:

1. That the Commission, through master planning and other assigned activities, indicate specific areas of systemwide performance considered to be of highest priority. Using the classification presented in section II, consideration should be given to priorities in the areas of:

   - State-level outcomes
   - Student outcomes that should be a priority for each institution
   - Research and service outcomes
   - Development or maintenance of the higher education infrastructure in the state.

   The essence of this recommendation is that the Commission design and implement an accountability program focused on assessing systemwide priorities. In the process, the Commission will acquire direct experience of the kinds of issues being faced by institutions and governing boards. At the same time, it will develop a coherent statement of state priorities that can provide a firm foundation for both statewide planning and for communicating important issues to government and the public, and to the institutions.

   In identifying system-level performance dimensions, care should be taken to state priorities in such a way that they give specific direction to subsequent assessment processes. General statements

about the importance of manpower trained to meet employer needs, for example, are less useful than more specific statements about the need for individuals with particular skills available to meet the needs of explicit occupations or industries.

2. That the Commission, working with the governing boards, refine existing mission, role, and scope statements for all institutions.

   Statements of institutional role and mission are at the hub of many interrelated statewide planning and accountability processes. While none will come to a complete halt without mission refinement, greater attention to mission will reduce confusion and will promote clearer articulation among processes. It is also important to note that each institution's selection of appropriate performance dimensions in the accountability process to some extent refines its conception of mission.

   This task is important because of the critical place of mission statements in such state-level processes as program review and resource allocation, and because it provides a clear statement of accountability at the system level. It is important here to state what the system is to do, and what its particular assets are to look like. This responsibility encompasses the roles and missions of both public and private institutions. Because the Commission has no authority to state missions for private institutions, their role in defining missions for public institutions becomes, from a systemic perspective, even more important.

3. That the Commission develop an assessment mechanism for monitoring the performance of the higher education system in the state.

   As institutions are accountable for progress toward institutional objectives, so should the Commission assume an obligation to move Colorado higher education as a whole toward system-level objectives. A corollary obligation is to periodically assess and report on its condition and performance.

   Specific requirements for collecting and monitoring information will obviously vary with the objectives established. Regardless of which are selected, however, some dimensions can be relatively easily monitored. Indeed, many can rely on information already available or obtained periodically from institutions through established reporting requirements. Access of students to the higher education system, for example, is relatively easy to determine through existing information. Others such as "quality" will be considerably more difficult. Adopting a definition of "quality" that emphasizes institutional effectiveness helps clarify the problem, but puts greater weight on the prior recommendation to refine institutional mission.

   In any event, specifying the means of assessment and the indicators to be used will in itself help clarify systemwide objectives. Indeed, the process of identifying assessment procedures may work hand-in-hand with identifying priority

statewide objectives. On occasion, the Commission may find it easier to begin with the question of what kinds of evidence it needs for accountability to help discover and articulate its own priorities. In the process, the Commission may also discover better ways to interpret and communicate current goals such as access, diversity, quality, and economic development.

4. That the Commission establish a format for an annual systemwide accountability report to the Governor and General Assembly, and to the public, containing a) indicators of the condition and performance of the state system along priority dimensions, and b) information about the actions taken by the Commission to enhance systemwide effectiveness.

   Because accountability requires both assessment and communication of results, it is incumbent on the Commission to regularly report on systemwide performance. At the same time, the format(s) used should exemplify good practice and should implicitly set a standard for institutional reporting.

   Furthermore, because many readers of accountability reports will be unacquainted with higher education, communication formats must be as straightforward and clear as possible. Given this requirement, we recommend development of appropriate "performance indicators." Following guidelines established by the National Center for Education Statistics, an indicator set should:

   - consist of statistically valid information related to significant aspects of the educational system and can be a single valued statistic or a composite index;
   - provide a benchmark for measuring progress or regression over time, or differences across geographical areas or institutions at one point in time, such that substantive inferences can be drawn from presentation of the data;
   - be representative of policy issues or aspects of education that might be altered by policy decisions;
   - be easily understood by a broad array of citizens concerned with education;
   - be based on relatively reliable data and not subject to significant modification as the response errors or changes in the personnel generating it.

   Furthermore, because the Commission, as an agency of state government, is required to annually report its actions, inclusion in the accountability report of a section describing steps taken to enhance system effectiveness would also be appropriate.

5. That the Commission attempt to explicitly link the various regulation and coordination processes it currently administers and utilize them as levers to effect change.

Any accountability program should be directly linked to each of the other major processes administered by the Commission. To the extent these processes are also directed toward enhancing system effectiveness, they will contribute to the understanding and achievement of common purposes. To the extent that such linkages are not explicitly recognized, the utility of these other processes as tools for promoting the achievement of system goals is diminished. Many implications can be identified: criteria for program approval and discontinuance should reference contributions to particular aspects of system effectiveness on the one hand, and reinforcement of institutional mission on the other; and resource allocation mechanisms should be assessed in light of the degree to which they create incentives or disincentives for accomplishing identified system goals.

B. Recommendations to CCHE Regarding Institutional Action on Selected Statewide Priorities

Recommendations that apply to the Commission's special responsibility to ensure institutional action and performance in particular identified areas of statewide priority are as follows:

6. That the Commission specify as early as possible any areas in which all institutions will be expected to provide accountability information.

   Regardless of assigned mission and role, there are some system goals toward which all institutions are expected to contribute. Some of these goals are relatively straightforward--for example access to higher education for identified minority groups. Others are of common importance but are less easy to assess. Among these are general knowledge outcomes that all baccalaureate graduates should have, regardless of institution attended (for example, knowledge of broad areas of inquiry and investigation in the sciences, social sciences, humanities and the arts). Also among them are general skills outcomes associated with the statewide goal of an educated citizenry (reading, writing, speaking and computation) or "higher order" skills important for state manpower development (for example, analysis, synthesis, critical thinking, and problem-solving).

   In fairness to the institutions, the Commission must specify these areas fairly early in the process. Because such identified dimensions will constitute a core component of the assessment plans designed by each institution for accountability, a list of priority dimensions should be available promptly in order not to impede the local development process.

7. That the Commission initiate a discussion with the governing boards and institutions to determine the most appropriate methods for assessing institutional performance on any dimensions identified in 6. above.

At least initially, we recommend that identification of common performance dimensions proceed without mandating a common method of assessment. At the same time, the Commission should begin discussions with the governing boards and institutions regarding the kinds of methods that institutions might consider for providing performance information on each identified dimension. Out of such discussion, some common methods or approaches might emerge. Alternatively, groups of institutions might undertake to develop common approaches for their own purposes. In probable areas of statewide concern such as general knowledge and skills, moreover, more than one assessment method should be allowed, and institutions should be encouraged to use multiple methods.

C. Recommendations to CCHE Regarding Institutional Accountability Processes

Recommendations that apply to the Commission's role in promoting and monitoring the development of sound accountability programs on each of the campuses are as follows:

8. That the Commission provide training seminars and technical assistance to institutional administrators with particular emphasis on a) selecting performance dimensions appropriate to each institution and b) identifying appropriate assessment approaches that might be used to gather evidence around each dimension selected.

   On most campuses, outcomes-oriented accountability is a relatively new idea. As a result, in attempting to respond to mandates to assess outcomes, institutions often lack direction and try to do more than is appropriate or possible. A set of seminars intended to define accountability in terms of institutional effectiveness, and covering available assessment alternatives and approaches in some detail would be a useful starting point. In addition to educating administrators on accountability issues, these seminars would provide a forum in which Commission staff can begin to develop guidelines and shape expectations about institutional accountability programs. At least as important, the seminars will help institutions to develop assessment processes geared toward internal needs for improvement. Substantial national experience with assessment has shown that institutions develop the best processes for accountability when these processes also have identifiable internal benefits. Because priority-setting and assessment approaches will be similar for institutions of similar kinds (for example, research universities, large community colleges, etc.), parallel seminar presentations should be considered that involve representatives from similar institutions.

   As a follow-up to these seminars, there will likely be a need for on-campus assistance at some institutions. Development of effective institutional programs would also proceed more smoothly if the Commission could provide for direct technical assistance and could help defray the associated costs.

9. That the Commission develop a set of guidelines for developing institutional accountability plans, and request institutions to file such plans at an agreed-upon date. The guidelines should include the kinds of information about the local process that will be periodically required to allow Commission monitoring and statewide reporting. In filing a plan, each institution should describe a) particular performance dimensions selected for attention, b) proposed assessment methods, and c) communication plans.

   Submitted plans should be brief. Their intent would be to ensure general agreement on substance and form between CCHE and each institution before institutions invest heavily in implementing a complex assessment program. The mutual understanding created would help avoid false starts and would curb development of non-conforming programs at an early point. Furthermore, developing the guidelines for institutional plan submission creates a requirement for CCHE to state its expectations clearly.

D. Recommendations Concerning Institution-Level Action

Because this paper is centered on the state perspective, most of our attention has been directed toward recommending Commission action. Following our logic, however, several additional recommendations apply to governing boards and institutions. Listed briefly, these recommendations include the following:

10. Each institution should take the initiative in critically reviewing and refining its own current statement of mission. Governing boards should encourage institutions to begin this process promptly, and should ensure that it takes place.

    In addition to a straightforward demand for clarity, the development of mission statements should reflect two additional principles. First, appropriate mission statements should include specification of outcomes as well as describing such traditional elements as breadth and depth of programs, quality of inputs, service region, and principal clientele. At the same time, the development of refined mission statements should be guided by a need to identify the institution's particular role in the statewide system of higher education and how this role differentiates it from other institutions in the system.

11. Using mission statements as a guide, each institution should identify specific performance dimensions for which it will hold itself accountable. This selection should recognize dimensions that are directly responsive to state priorities as well as those that are unique to the institution.

    Institutions are cautioned only to identify institution-wide dimensions at this juncture. Outcomes that are specific to particular programs should be treated in the program review process, not in the institutional accountability process. By

carefully identifying only institution-wide performance dimensions, the list can be kept relatively short.

12. Each institution should develop an assessment plan and should review it with Commission staff before submission for approval.

    This step will help minimize misunderstanding once the program is implemented. It may also promote learning on both sides about more effective ways to assess particular dimensions of performance. It is important for institutions to recognize that the Commission will be basing approval of institutional assessment plans on at least two criteria. First, it is expected that the proposed plan follows the Commission guidelines for institutional plans with respect to coverage, methods, and communication of results. Secondly, the plan should identify priority outcomes for assessment that are consistent with the institution's assigned mission, role, and scope.

13. Each institution should communicate the results of its assessment to appropriate audiences on a regular basis.

    Reporting should include actions taken as well as actual results of the process. It should also utilize formats tailored to the specific information needs of different institutional constituencies, for example, prospective students and their parents, local employers and governments, and citizens of their particular service region.

14. Each institution should establish linkages between assessment and current institutional program review processes.

    In particular, institutional administrators should identify any specific programmatic outcomes that contribute directly to institutional or systemwide objectives and should ensure that program performance is assessed in these areas. Institutional administrators should also ensure that program <u>outcomes</u> are assessed in the review process and that these outcomes are in areas consistent with institutional role and mission.

APPENDIX A

This Appendix is included to provide some general direction about the kinds of methods available for assessing particular effectiveness dimensions covered in this document. It is not intended as a full treatment of the topic; its primary purpose is to indicate the range of choices involved in data collection and to suggest most common current practice.

1. State/System Level Dimensions of Effectiveness

   a. General Education Levels/Population Literacy: Information about the General Education Levels of the Population can be acquired in two distinctly different ways. The first and easiest is to use Census data on education levels of individuals in the population. Since these data are compiled by geographic region, the relative education levels of people in various regions can be readily determined. The most useful breaks are those that indicate the proportion of populations age 25 and over that have 1) less than a high school education and 2) less than an 8th grade education. The second alternative is implementation of a research program such as the National Assessment for Educational Progress Adult Literacy Exam. Use of this approach would entail considerable expenditure, but it would also measure adult literacy directly rather than through surrogate measures such as years in school.

   b. Employment Characteristics: In this arena it would be useful to compile information on number of employees categorized by both industry and occupation as well as information about employment by size of employing firm.

   c. Economic Conditions: Indicators of economic conditions in the state that may be of interest are trends in the state gross product, trends in both personal and disposable income for the population of the state, and trends in numbers of business formations and failures. These are but examples of indicators in this arena. There are undoubtedly many others.

   d. Access/Participation: Levels of student access or participation are typically measured in two ways. For full-time students (typically traditional college-age students) the measure of access is typically the ratio of entering college students to the number of high school graduates from the previous year. In Colorado, access by geographic area and by minority status are likely to be focal characteristics, although access on the part of students from different socioeconomic backgrounds is also at issue. The second approach to assessing access pertains more to part-time students. This method involves comparing the attending student population with characteristics of the state population in relevant age cohorts (typically ages 25 to 44).

   e. Choice: While appropriate indicators of access or participation are measured relative to the system as a whole, measures of choice utilize the same student characteristics and review their distribution across institutions. Similar distribution analyses

can apply to any programs of particular state interest such as teacher education and medicine. Here the question is not whether the student gains access to the system but has appropriate opportunity for access to each part of the system.

f. Minority Student Success: A common indicator is the number of degrees granted to minority students relative to institutional enrollments and to the population base in the relevant cohorts. Here the question is one of the relative performance of minorities compared to majority students.

g. Diversity: The most common measures of diversity are the distributions of total enrollments, first-time students, and degrees granted across various sectors of the higher education system in the state. It will probably be most useful to show diversity in terms of public, independent and proprietary institutions, and to track the "market shares" of enrollments by major type of institution within these sectors.

h. Institutional Quality: This is the single hardest dimension for which to develop straightforward quantitative measures. It is made doubly difficult by the necessity of not defining quality solely in terms of the characteristics of major research universities. If quality is seen as effectiveness, and defined as producing outcomes called for in its mission and possessing the resources appropriate to its mission, quality in each institution is revealed by the extent to which it conforms to the "ideal" institution of its type. The scoring system utilized in Tennessee to determine the extent to which each institution accomplishes its desired objectives represents one model for calculating "quality" in this format.

i. Production of Trained Manpower: A common measure is the number of degrees granted (by level) in each of the fields selected as being of primary importance to the state. A secondary measure is the proportion of graduates in these fields placed within the state of Colorado--data that can be acquired through use of a student follow-up survey. Placement rates in selected fields will probably be important enough to be collected by all institutions in the state.

j. Levels of Research: The simplest indicators of research effort are based on expenditure levels for research. It is particularly useful to determine total expenditure levels by discipline and to subsequently determine the share of national expenditures on research in that discipline being conducted within the state. This represents a simple measure of the relative strength of the Colorado research enterprise vis-a-vis the rest of the nation. To the extent that applied research is a state priority, the proportion of research dollars coming to the institutions from the corporate sector provides some measure of this phenomenon.

k. Provision of Services: Assessment measures for this dimension are completely determined by the selection of those services

identified as being state priorities. If, for example, health care for the indigent is identified as a priority, a simple count of the number of individuals served provides one measure. A more sensitive measure would be the number served relative to the population living below the poverty level, as compared to the same proportion developed for those above the poverty level.

1. Efficiency: The concept of the efficiency of a system of higher education has received relatively little attention. Much more attention has historically been devoted to institutional efficiency. Since the objective is to determine the efficiency with which the institution produces the array of outcomes implied by their mission, the traditional measure has been the cost of operating an institution relative to the cost of operating other institutions (either within the state or elsewhere) having similar missions. The simplest and most frequently used measure of efficiency is institutional cost per FTE student. While simplest to calculate, this measure is also most subject to misinterpretation. The fundamental problem is that institutions within a system offer different programs, i.e., they differ in their emphasis on instruction, research, and public service. Within instruction they differ in emphasis by program and by level of instruction. These differences make comparability problematic to say the least, which in turn makes it difficult to sum across the performance of the institutions in such a way as to generate a valid measure of system output. Within an area such as instruction, it might be possible to adjust each institution's credit hour production to account for these differences and thereby develop common measures that could be summed across institutions. For example, all credit hours might be expressed in terms of a standard lower division credit hour. Combined with expenditures for instruction, the ingredients would be present for a rough indicator of efficiency: system performance could be evaluated over time, and possibly even against systems in other states if available data would support the required standardization routines.

2. Institutional Level Dimensions of Effectiveness

   a. General Knowledge: A number of methods are currently in use to assess student cognitive development--whether in general education or in particular disciplines. They include (1) standardized testing--for example ACT Assessment, Graduate Record Examination General or Field Exams, CLEP subject examinations, and various field-specific graduate admissions or certification examinations such as the GMAT, LSAT, Engineering Readiness Test, etc.; (2) locally-designed assessment instruments constructed by discipline faculty--for example a senior comprehensive examination or capstone project, and (3) student surveys including self-report items on gains in cognitive knowledge--either commercially available (for example CIRP, ACT/ESS, SOIS, CSEQ) or locally designed.

b. General Skills: Basically the same methods are available for assessing general (collegiate) skills. Among standardized tests, ACT/COMP is popular as it is intended to assess broad application of "liberal learning" skills. For assessing basic collegiate skills such as reading, writing, and computation, several state tests have been developed--for example the Florida CLAST and the New Jersey Test of Basic Skills. Many colleges use locally-designed placement tests in reading, writing and computation that can also be used as post-test assessment instruments. For such higher order skills as "critical thinking" or problem-solving, standardized tests or assessment methods drawn from psychology can be used--for example the Kohlberg scale of ethical/moral development, or Perry's scheme for assessing critical thinking. Finally, self-reported skills may be usefully gathered by survey.

c. Values/Attitudes: Most institutions gather information of this kind by survey--either of currently enrolled or former students. All commercially-available student surveys contain such items--for example the Cooperative Institutional Research Program (CIRP), the ACT Evaluation Survey Service, the NCHEMS/College Board Student Outcomes Information System (SOIS), or the Pace College Student Experience Questionnaire (CSEQ). Locally-designed student surveys can be equally effective. If student populations are small, excellent use can also be made of "focus group" and individual interviewing techniques.

d. Student Behavior While Enrolled: Various important types of student behavior can be effectively documented using registration record systems. These include term-to-term retention, program completion within a defined time period, student enrollment by major program, course-taking patterns, and course-completion rates. In order to generate appropriate indicators, however, longitudinal record systems enabling students to be tracked throughout their enrollment must be constructed. Such "cohort studies" can be accomplished with varying degrees of sophistication ranging from simple systems operating on a microcomputer to complex mainframe record systems.

e. Job Placement and Tenure: Employment follow-up is usually accomplished through questionnaire surveys of former students. Generally, it is important to obtain information from both program completers and non-completers, as the latter may nevertheless have attained their occupational goals. Placement office records are also of value, but generally cover only those who have used placement services. Surveys of employers, though intended to ensure that curriculum content is appropriate given employer needs, will also often contain items on former student placement and tenure.

f. Subsequent Education: Like job placement, the primary method for obtaining information is former student surveys. Generally important are (1) the institution(s) attended, (2) programs enrolled for, (3) success in transferring credit, (4) subsequent

academic performance including completion and grade-point, and (5) assessment of the relevance and quality of prior instruction received given subsequent education. Where clear linkages among institutions are present, for example an articulation agreement or a history of substantial transfer, agreements to share student records can be negotiated. Alternatively, state or system authorities in many states periodically conduct transfer studies that track students from institution to institution. A final, rarer, alternative is to construct a "unit record system" for the entire state or system in which student records for all institutions are maintained centrally in a common format.

g. Certification, Licensure, and Professional Contributions: Professional career development is also most commonly obtained by surveys of former students that include certification, licensure, professional memberships and recognitions, etc. Certification/licensure records are also directly obtainable in many cases. Where the institution administers a licensing examination, such records are immediately at hand. In cases such as Nursing and Accounting, moreover, testing is visible and periodic, and institutions can obtain passage results from the administering agency. Where certification/licensing is administered by the state, it is possible to match certification records with student records to produce an index.

h. Graduates Remaining In-State: Follow-up surveys commonly report state of residence, although former student records may be unreliably maintained after more than about five years.

i. Research and Scholarship: Sponsored or assigned research is generally documented by dollars awarded disaggregated by discipline or type of activity. Another traditional indicator of formal research productivity is the number of juried publications or citations indices. Unsponsored research or service is more difficult to document. Generally such outcomes emerge from faculty activity surveys periodically administered, or from constituency surveys of employers, local governments, civic or volunteer organizations, etc. for purposes of ascertaining general community impact.

j. Community/State Service: Because "service" entails so many things, a number of data gathering methods are commonly practiced. Service contributions of faculty, staff or students can be made a part of surveys of these populations generally undertaken for other purposes. These would include both voluntary and assigned activities. Use of campus facilities by the community and such things as citizen participation/attendance at institutional events may be documented by institutionally-maintained records. Finally, community impact surveys (generally mailed or telephone) of citizens, and needs assessment studies (mailed or telephone surveys or in-depth interviews) of area businesses, governments, and civic or volunteer organizations are often used to document service contributions.

Many of the above methods can be effectively combined. For example, almost all can be directly or indirectly assessed by means of a well-conceived former student survey, although knowledge and skill outcomes are in this case documented only by self-report. Moreover, a number of instruments (the ACT/COMP for example) attempt to ascertain both general knowledge and general skills outcomes. As in any other "indicators" approach, it is important to develop and use more than one method or approach. Furthermore, it is important to interpret results as a "profile" of performance, rather than examining each indicator independently or viewing each as a minimum standard to be met. Finally, as emphasized throughout, the investment in data gathering should match the priority of the outcome in question, given the institution's assigned mission, predominant program direction, and primary clientele.

APPENDIX B

In the course of preparing this paper, we consulted numerous references on state higher education policy, assessment methods and approaches, and on the statutory and political context for Colorado higher education. Because the paper is intended for policy guidance, we chose a format that minimized direct citations. As the Commission moves to implement an accountability program, however, it will need further guidance on the details of alternative approaches and on the experiences of other states and institutions with similar types of programs. The intent of this brief Appendix is to provide a short list of references for guidance in developing implementation alternatives. References are provided in the areas of (1) existing relevant Colorado statutes or public planning documents, (2) approaches and methods for assessing institutional effectiveness and educational outcomes, (3) the impact of assessment and evaluation information on institutions and state systems, and (4) appropriate state and institutional planning and policymaking.

1. References on the Context of Colorado Higher Education:

General Assembly of the State of Colorado. House Bill No. 1187. Denver, Colo.: May 1985.

Colorado Commission on Higher Education. Policy and General Procedures: Quality Incentive Program. Denver, Colo.: 1986.

Colorado Commission on Higher Education. Policy and General Procedures for State Level Review of Existing Programs. Denver, Colo.

Colorado Commission on Higher Education. Admission Standards Policy of the Colorado Commission on Higher Education. Denver, Colo.: October 1986.

Colorado Commission on Higher Education. "Goals and Objectives for the System of Postsecondary Education." Excerpts from the Master Plan. Denver, Colo.

Colorado Commission on Higher Education. Summary Notes from 1986 Community Roundtables. Denver, Colo., 1986.

Colorado Commission on Higher Education. "Memorandum to Commissioners for Master Plan Retreat." Denver, Colo.: January 28, 1987.

Colorado Commission on Higher Education. Laws of the Colorado Department of Higher Education. Denver, Colo.: February 1986.

2. References on Assessment Approaches and Methods:

Useful general discussions of assessment methods and approaches include:

Adelman, Clifford (Ed.). Assessment in American Higher Education: Issues and Contexts. Washington, D.C.: Office of Educational Research and Improvement, U.S. Dept. of Education, 1986.

Alverno College Faculty, Assessment at Alverno College. Milwaukee, Wisc.: Alverno Productions, 1985.

Astin, Alexander W. Four Critical Years: Effects of College on Beliefs, Attitudes and Knowledge. San Francisco: Jossey-Bass, 1977.

Bowen, Howard R. Investment in Learning: The Individual and Social Value of American Higher Education. San Francisco: Jossey-Bass, 1977.

Ewell, Peter T. (Ed.). Assessing Educational Outcomes. New Directions for Institutional Research #47. San Francisco: Jossey-Bass, 1985.

Ewell, Peter T. The Self-Regarding Institution: Information for Excellence. Boulder, Colo.: National Center for Higher Education Management Systems [NCHEMS], 1984.

Ewell, Peter T. Information on Student Outcomes: How to Get It and How to Use It. Boulder, Colo.: NCHEMS, 1983.

Feldman, Kenneth A. and Theodore M. Newcomb. The Impact of College on Students. San Francisco: Jossey-Bass, 1969.

Jones, Dennis P. "Indicators of the Condition of Higher Education." Paper prepared for the National Center for Educational Statistics. Boulder, Colo.: NCHEMS, October, 1985.

McDonald, Jean G. "College Quality: Measuring What Students Learn in Higher Education." In Time for Results, The Governors' 1991 Report on Education--Task Force on College Quality Supporting Works. Washington D.C.: The National Governors' Association, August, 1986.

Micek, Sidney S., Allan L. Service, and Yong S. Lee. Outcome Measures and Procedures Manual. Field Review Edition. Boulder, Colo.: NCHEMS, 1975.

Pace, C. Robert. Measuring the Outcomes of College. San Francisco: Jossey-Bass, 1979.

Useful basic references on conducting particular kinds of assessment and outcomes studies include the following:

Armijo, J. Frank, Sidney S. Micek, and Edward M. Cooper. Conducting Community Impact Studies: A Handbook for Community Colleges. Boulder, Colo,: NCHEMS, 1978.

Caffrey, John and Herbert H. Isaacs. Estimating the Impact of a College or University on the Local Economy. Washington, D.C.: American Council on Education, 1971.

California Community Colleges. FIPSE Project Item Bank. Sacramento: Chancellor's Office, California Community Colleges, 1983.

Dillman, Don A. Mail and Telephone Surveys: The Total Design Method. New York: John Wiley, 1982.

Ewell, Peter T. Student Outcomes Questionnaires: An Implementation Handbook, Second Edition, Boulder, Colo.: NCHEMS, 1983.

Pace, C. Robert. Higher Education Measurement and Evaluation KIT. Los Angeles: Center for the Study of Evaluation, University of California at Los Angeles, 1971.

Terenzini, Patrick T. "Designing Attrition Studies." In Ernest T. Pascarella (Ed.), Studying Student Attrition. New Directions for Institutional Research #36. San Francisco: Jossey-Bass, 1982.

3. References on Institutional Impact of Assessment

A number of institution-level assessment programs have been thoroughly documented with respect to both their impact on the institution and their implementation. These studies are useful to discover alternative ways of approaching assessment and evaluation and to discover the benefits of the process for institutions themselves:

Banta, Trudy W. (Ed.). Performance Funding in Higher Education: A Case Study. Boulder, Colo.: NCHEMS, 1985.

McClain, Charles J. Degrees with Integrity: A Value-Added Approach to Undergraduate Assessment. Washington, D.C.: American Association of State Colleges and Universities, 1984.

Mentkowski, Marcia and Austin Doherty. Careering After College: Establishing the Validity of Abilities Learned in College for Later Careering and Professional Performance. Milwaukee Wisc.: Alverno Productions, 1983.

4. References on State and Institutional Higher Education Policy

Some useful references on policy tools for effecting improvement in state higher education systems and for improving institutional mission, planning and evaluation procedures are as follows:

Caruthers, J. Kent and Gary B. Lott. Mission Review: Foundation for Strategic Planning. Boulder, Colo.: NCHEMS, 1981.

Education Commission of the States. Transforming the State Role in Undergraduate Education: Time for A Different View. The Report of the Working Party on Effective State Action to Improve Undergraduate Education. Denver, Colo.: ECS, 1986.

Ewell, Peter T. Levers for Change: The Role of State Government in Improving the Quality of Postsecondary Education. Denver, Colo.: Education Commission of the States, 1985.

Ewell, Peter T. The State Role in Assessing College Outcomes: Policy Choices and Probable Impacts. Washington, D.C.: The National Governors' Association, June, 1986.

National Governors' Association. Time for Results: The Governors' 1991 Report on Education. Washington, D.C.: The National Governors' Association Center for Policy Research and Analysis, 1986.

Jones, Dennis P. Higher Education Budgeting at the State Level: Concepts and Principles. Boulder, Colo.: NCHEMS, 1984.